



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,419	12/08/2003	George P. Vella-Coleiro	1052.051	2505
22186	7590	04/26/2006	EXAMINER	
MENDELSON AND ASSOCIATES, P.C. 1500 JOHN F. KENNEDY BLVD., SUITE 405 PHILADELPHIA, PA 19102			TSE, YOUNG TOI	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 04/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/730,419

Applicant(s)

VELLA-COLEIRO, GEORGE P.

Examiner

YOUNG T. TSE

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 7-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4, 7-13, 16-17, 21 and 23-24 is/are rejected.
- 7) ☒ Claim(s) 14,15,18,19 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06212004:01232006:02272006
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed January 23, 2006 have been fully considered but they are not persuasive. The Applicant argues Figures 1-4 should not be labeled as "Prior Art" or "Related Art" because Figures 1-4 are described in the Detailed Description section of the specification and not the Background of the Invention section. Although Figures 1-4 are described in the Detailed Description section of the specification and not the Background of the Invention section, clearly, the description of Figures 1-4 in the Detailed Description section of the specification is directly related to the "Prior Art" or "Related Art" Figures 1, 2, 8, and 3, respectively, of the U.S. Application Serial No. 09/395,490. Therefore, Figures 1-4 should be designated by a legend such as --Prior Art-- or --Related Art-- because only that which is old is illustrated.

Drawings

2. The drawings were received on January 23, 2006. These drawings are acceptable.

3. Figures 1-4 should be designated by a legend such as --Prior Art-- or --Related Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 12 is objected to because of the following informalities: in claim 12, line 1, "the positive-" should be "the positive-frequency". Appropriate correction is required.

Allowable Subject Matter

5. The indicated allowability of claims 3-6 and 9-19 is withdrawn in view of the newly discovered reference(s) to Blauvelt et al. and the copending Application No. 10/607,924. Rejections based on the newly cited reference(s) follow.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-2, 4, 7-9, 11-13, and 17 are provisionally rejected on the ground of nonstatutory double patenting over claims 1-3, 8-10, 12, and 15-17 of copending Application No. 10/607,924. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: Although claims 1-2, 4, 7-9 and 11-13 of the instant application use slightly different language than claims 1-3, 8-10, 12, and 15-17 of copending Application No. 10/607,924, the claimed subject matters are the same in both applications, for example, in claim 1, the first set and the second set of frequency components of the instant application correspond to positive and negative frequency components of the input signal as recited in claim 1 of the copending Application No. 10/607,924.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-2, 7-10, 13, 16, 20-21 and 23-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Blauvelt et al. (U.S. 5,132,639) herein after refer to as “Blauvelt”.

With respect to claims 1, 7, 9-10, 13, 20 and 23, Blauvelt discloses a pre-distortion circuit in Figure 6 comprising (a) a first signal processing path (52) adapted to generate a main pre-distortion signal from the RF input signal; (b) a second signal processing path (59-73) adapted to generate a first frequency-dependent pre-distortion signal corresponding to a first set of frequency components for the RF input signal; (c) a third signal processing path (82-91) adapted to generate a second frequency-dependent pre-distortion signal corresponding to a second set of frequency components for the RF input signal, wherein the first set of frequency components is different from the second set of frequency components; and (d) a combiner (58 and 53) adapted to combine the first and second frequency-dependent pre-distortion signals with the main pre-distortion signal to generate the pre-distorted signal (also see Figures 5-6, column 6, lines 56-67, and column 7, lines 35-49). The switch-able RF inverters (65 and 89) in the second and third signal processing paths correspond to positive or negative frequency components of the RF input signal (column 8, lines 26-31 and column 9, lines 22-34).

With respect to claims 2 and 21, the phase of the pre-distortion is also frequency-dependent (column 4, lines 45-48 and column 6, line 65 to column 7, line 3).

With respect to claims 8, 16 and 24, the RF input signal is represented in a base-band domain because the RF signal is transmitted from a base-band signal of a well known transmitter and the frequency-dependent pre-distortion signals in the second and third signal processing paths are generated in a digital domain because at least part of the block elements in the second and third signal processing paths is integrated in digital circuit, for example, the equalizer 64 is a digital filter.

Allowable Subject Matter

10. Claims 4, 11-12, 14-15, 17-19 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and to file a terminal disclaimer signed by the assignee fully comply with 37 CFR 3.73(b).

11. Claim 12 would be allowable if rewritten or amended to overcome the objection(s) set forth in this Office action.

12. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to show or suggest a method or apparatus for generating first and second frequency-dependent pre-distortion signals is further generated by differentiating first and second sets of one or more waveforms with respect to time to generate first and second sets of one or more differentiated waveforms and applying the first and second sets of one or more differentiated waveforms to a positive-frequency or

Art Unit: 2611

negative operation to generate the first and second frequency-dependent pre-distortion signals.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

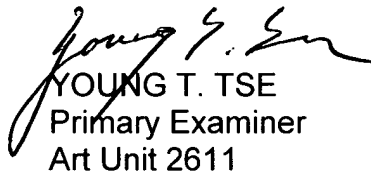
Cova discloses a digitally-based high distortion rejection scheme for linearizing an RF power amplifier employs a digital signal processor to execute a plurality of signal processing operators that represent an inverse of static non-linearities in the transfer characteristics of the amplifier.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YOUNG T. TSE whose telephone number is (571) 272-3051. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The Central FAX Number for the organization where this application or proceeding is assigned is (571) 273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


YOUNG T. TSE
Primary Examiner
Art Unit 2611